Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Connect America Fund	)	WC Docket No. 10-90
Universal Service Reform – Mobility Fund	)	WT Docket No. 10-208

COMMENTS OF COMPETITIVE CARRIERS ASSOCIATION

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EXECUTIVE SUMMARY

Competitive Carriers Association ("CCA")[1] applauds the Federal Communications Commission ("FCC" or "Commission") for adopting a *Report and Order* to implement Phase II of the Mobility Fund ("MF-II").[2] The Commission's *Report and Order* takes a substantial step toward expanding LTE coverage in hard-to-serve markets across the United States, and re-energizes the efforts of CCA's members to invest in communities often left behind by larger carriers. CCA also commends the Commission for committing to adopt a "robust, targeted challenge process that efficiently resolves disputes about areas eligible for MF-II support,"[3] and for seeking additional public input on the elements of the MF-II challenge procedure in a *Further Notice*. As the Commission recognized, the challenge process is an "integral part" of the MF-II program—a component that, if designed correctly, will promote the inclusion of rural and Tribal communities in today's digital economy.[4]

CCA agrees that the challenge process must be efficient, ease burdens on smaller providers, and generate accurate determinations of where qualifying coverage exists and where MF-II must target support. To that end, the Commission should adopt a challenge process using the structure proposed as Option A in the *Further Notice*, while placing the ultimate burden of

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1 CCA is the nation's leading association for competitive wireless providers and stakeholders across the United States. CCA's membership includes nearly 100 competitive wireless providers ranging from small, rural carriers serving fewer than 5,000 customers to regional and national providers serving millions of customers. CCA also represents approximately 200 associate members including vendors and suppliers that provide products and services throughout the mobile communications supply chain.

2 *Connect America Fund, Universal Service Reform – Mobility Fund*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 10-90 & 10-208 (Mar. 7, 2017) ("*Report and Order*" or "*Further Notice*").

3 *Further Notice* ¶ 226.

4 *Id.*

persuasion on challenged carriers who are best able to marshal evidence establishing qualifying coverage by their own networks. The challenge process should be available to all interested parties, not just subsidized carriers or state and local authorities, to promote broad participation by all groups interested in elevating the digital experience of rural and Tribal communities. The challenge process also should not be subject to a minimum challengeable area requirement.

The Commission also should adopt standards to ensure that evidence supporting final eligibility determinations is clear, rigorous, and above all, reliable. The Commission can accomplish these goals while also providing challengers and challenged parties with substantial flexibility over how to prove their case. To initiate a challenge, the Commission should require a certification to a good faith belief that the challenged area does not receive qualifying coverage, which will foster sensible participation while also deterring frivolous claims. The Commission likewise should establish clear signal strength and resolution standards for propagation maps submitted in response to an initial challenge.

Data on actual speeds should be subject to a signal strength standard, and the Commission should require the collection of both speed and signal strength data at a sufficient number of points within a challenged area to ensure the presence of qualifying coverage, and adequately reflect consumers' service experience on-the-ground throughout the challenged area. In addition, the Commission should permit parties to submit drive test data layered with data gathered by applications on consumer devices, while adopting clear guidelines to ensure that such evidence is recent, representative, independently gathered and verified, and weighed in a manner that is consistent with its reliability.

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I. INTRODUCTION

CCA shares the Commission's vision for a successful MF-II program with a targeted and robust challenge process. First and foremost, the MF-II challenge procedure must "ensure that areas that may require support for qualified 4G LTE are eligible for, and potentially receive, MF-II support."[5] In addition, challenges must proceed "as efficient[ly] as possible," and without placing untenable "burden[s] . . . on smaller providers."[6]

CCA believes the Commission can meet both of these goals if it relies on elements of adjudicative procedure that are well-established in universal service settings, and adopts practical evidentiary standards that are appropriate to the Commission's inquiry. To that end, CCA applauds the Commission's recent creation of the Rural Broadband Auctions Task Force to implement the Connect America Fund II and MF-II auctions.[7] To ensure that limited resources allocated for Mobility Fund II are put to their best use, however, the Task Force must attempt to standardize the unreliable and inconsistent underlying data to present accurate, on-the-ground broadband coverage that reflects consumers' actual mobile experiences.[8] This should be a top priority of the FCC and Task Force, and can be achieved by applying the principles discussed below.

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5 *Id.*

6 *Id.* ¶ 227.

7 Chairman Pai Announces Formation of the Rural Broadband Auctions Task Force, Apr. 3, 2017, *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0403/DOC-344201A1.pdf.

8 *See* Letter from Sens. Wicker (R-MS) and Manchin (D-WV), U.S. Senate, to The Hon. Ajit Pai (Apr. 12, 2017), *available at* https://www.wicker.senate.gov/public/_cache/files/d2d30dd8-76f2-4c45-8d3a-b64c9018265c/041217-fcc-rural-broadband-auctions-task-force-letter.pdf (noting that "coverage data that accounts for the actual consumer experience in our rural communities is a necessary step in the effort to close the digital divide").

First, as proposed under Option A, the Commission should place the initial burden on the challenger to certify to a good faith belief that an area is unserved, allow the challenged party to respond with a propagation map, and permit the challenger to submit evidence of actual, on-the-ground speeds provided to consumers.[9] These steps will reduce burdens associated with the challenge process on smaller providers and other challenging entities, while deterring frivolous claims that would place the integrity of the MF-II program at risk. The Commission should make clear that the ultimate burden of persuasion rests on the unsubsidized competitor, given the difficulties inherent in forcing litigants to prove a negative.

Second, the Commission must avoid restrictions that would result in a less accurate and robust challenge procedure. Consistent with Commission precedent and the aims of universal service policy, the Commission should not limit challenges to service providers and governmental entities alone, and instead allow any interested party to file a challenge. The Commission also should decline to adopt a minimum size for the area initially challenged to avoid excluding difficult-to-serve communities from LTE coverage.

Once a determination is made regarding the scope of eligible areas, the Commission should adopt evidentiary requirements and a burden of persuasion for challenging these areas that promote efficiency, reduce burdens on smaller providers and other challenging entities, and generate accurate results. For initial challenges, the Commission should not require evidence other than a certification of a good faith belief that an area is unserved. For propagation maps submitted in response to an initial challenge, the Commission should adopt uniform and reasonable signal strength and resolution standards. To demonstrate the actual speeds provided

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[9] *Id.* ¶¶ 232, 236, 238.

to consumers, the Commission should require speed and signal strength testing at a sufficient number of points within the challenged area, exclude speed data gathered more than six months prior to submission, and weigh speed data gathered by passive applications on consumer devices in accordance with their reliability. In addition, the Commission should require testing be conducted by an independent third party or an in-house, certified engineer

II. OPTION A WILL PROMOTE A ROBUST PROCESS WITH MORE ACCURATE RESULTS

In the *Further Notice*, the Commission proposed two "potential structures for the challenge process."[10] The first structure, Option A, would place an initial burden on challengers to certify that the challenged area is unserved based on a "good faith belief, based on actual knowledge or past data collection, that there is not 4G LTE with at least 5 Mbps download speed coverage as depicted on Form 477."[11] The burden would then shift to the challenged carrier to submit a propagation map, "substantiated by the certification of a qualified engineer," to demonstrate expected coverage.[12] If the challenged carrier succeeds in establishing coverage, Option A would allow challengers to submit evidence that 4G LTE of a certain quality is not available, and provide challenged carriers with an opportunity to submit speed data in rebuttal.

The second structure, Option B, requires challenging parties to submit a coverage shapefile, supplemented by actual speed tests or transmitter monitoring data, for each challenged area within a 60-day window. Challenged carriers then have 30 days to respond. Interested parties need additional time to review data submitted, especially smaller carriers with limited

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[10] *Id.* ¶ 231.

[11] *Id.* ¶ 232.

[12] *Id.* ¶ 236.

resources. CCA believes that Option A better balances the need for robust standardized, and accurate data that leads to clear, rigorous, and reliable eligibility determinations is clear, rigorous, and above all, reliable while providing challengers and challenged parties with flexibility to prove their coverage.

A. Option A would establish a more accurate and less burdensome challenge procedure.

Option A will appropriately deter frivolous or unsupported challenges while preserving the practical and efficient option for smaller entities with fewer resources to initiate a challenge.

First, Option A filters both frivolous challenges and "obviously mis-categorized areas" before either party is required to generate and submit propagation maps and speed data demonstrating qualifying coverage or the lack thereof. More specifically, by requiring challenging parties to certify to a good faith belief that the challenged area is unserved, Option A prevents parties from filing baseless disputes with a limited likelihood of success. Moreover, unlike Option B, Option A allows a challenged provider to simply confirm whether an area may have been mis-categorized in response to a challenge, and, if so, to concede to the challenge before either side or the Commission expends additional unnecessary resources. This arrangement will streamline MF-II procedures and ensure an effective, yet resource-savvy challenge process, while protecting data that a carrier may deem confidential.

Second, Option A is consistent with the fundamental structure of the Commission's framework for identifying eligible areas, which presumes that such provider certifications furnish

adequate grounds for an eligibility determination absent a rebuttal.[13] Indeed, as the Commission has recognized in developing challenge processes in the past, a signed certification is a reasonable evidentiary option to afford a challenging party given "the difficulty in proving a negative."[14]

Third, because Option A avoids placing onerous burdens on challenging parties that deter mere participation in the challenge process, it also better fulfills Congress's direction in the Regulatory Flexibility Act that "agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and government jurisdictions subject to regulation."[15] The Commission must recognize that unsubsidized competitors are often larger than subsidized carriers that have specialized in serving rural and Tribal markets, and design the challenge process to deter larger carriers from prosecuting aggressive coverage estimates that smaller carriers simply cannot, and should not have to, systematically dispute.

Further, by placing the initial burden on challenging parties to provide evidence of non-coverage, the Commission would drastically limit the ability of interested parties to challenge

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[13] *See id.* ¶¶ 3, 226 (suggesting that Form 477 data is reliable enough for pre-challenge determinations because they are "provider-filed and certified").

[14] *See also Connect Am. Fund*, Report and Order, 28 FCC Rcd 7211, 7218 ¶ 15 (2013) ("*Phase II Challenge Process Order*") (noting that, in light of "the difficulty in proving a negative," a subsidized carrier may challenge an area initially determined to be served by an unsubsidized competitor by providing a "variety of . . . signed certification[s]" demonstrating a lack of service).

[15] 5 U.S.C. § 601 at note Congressional Findings and Declaration of Purpose. *See also* Federal Communications Commission, FCC Directive, Regulatory Flexibility Act of 1980, as amended (P.L. 96-354) and the Small Business Regulatory Enforcement Fairness Act of 1996 (P.L. 104-121), FCCINST. 1158.2 (2011), *available at* https://transition.fcc.gov/foia/e-room-regulatory-flexibility-act.pdf (establishing procedures to ensure that FCC bureaus "provide flexibility and regulatory relief to small entities where appropriate").

assertions of qualifying coverage, and effectively foreclose challenges altogether in many parts of the country.[16] Moreover, Option B would place greater burdens on challenging parties, especially smaller carriers. Within a compressed timeframe of 60 days, challenging carriers would have to present their drive test and speed test data for all areas they wish to challenge. Even for areas that are "obviously mis-categorized,"[17] challenging carriers would have to comply with the same procedure. And in response, carriers have even less time to mount a successful, robust challenge. Thus, Option B would create a process that is less efficient for challengers and fails to "take into account that smaller providers will have fewer resources available." It is unclear whether Option B goes far enough in "reduc[ing] the burden of the challenge process on smaller providers."[18]

Finally, Option A does not unduly burden *challenged* carriers; indeed, it places no greater burden on such parties than the Commission has in previous Universal Service Fund proceedings, such as rate-of-return carriers that opted to remain on legacy support. In fact, in the rate-of-return context, the Commission placed the initial burden on *unsubsidized competitors* to both "certify that they are offering service to at least 85 percent of the locations in [a] census

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[16] *See*, e.g., Letter from Christopher J. Wright, Counsel, CCA, to Marlene H. Dortch, Secretary, FCC, at 3, WC Docket No. 10-90 & WT Docket No. 10-208 (filed Feb. 16, 2017); Letter from David LaFuria, Lukas, LaFuria, Gutierrez & Sachs, LLP, Counsel to U.S. Cellular, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 and WT Docket No. 10-208, at 2 (filed Feb. 14, 2017) ("It will be difficult, if not impossible, for small competitors to rebut coverage claims for multiple carriers that is overstated in rural areas."); Letter from Caressa D. Bennet, General Counsel, and Erin P. Fitzgerald, Regulatory Counsel, RWA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 and WC Docket No. 10-90, at 3 (filed Feb. 16, 2017) ("The draft's current requirement that a subsidized carrier demonstrate unsubsidized coverage is not LTE at 5/1 speed by a 'preponderance of the evidence' imposes a hardship on rural carriers with limited resources.").

[17] *Further Notice* ¶ 227.

[18] *Id.*

block" identified as being competitively served according to Form 477 data, and "provide evidence sufficient to show the specific geographic area in which they are offering service."[19] The Commission emphasized that the unsubsidized competitors "will be required to submit additional evidence in support of that certification clearly to establish where they are providing service" prior to the submission of evidence by a challenging party, or risk the Commission concluding that the relevant block is "not . . . competitively served."[20] Indeed, in at least one key respect, the burdens on challenged parties that would result from Option A are even lower than in the rate-of-return context. Whereas the Commission previously required challenged carriers to submit further evidence of coverage even *before* an interested party lobs a challenge, Option A substantially reduces this burden by narrowing obligations to only those areas identified as unserved in a challenging party certification.

B. The Commission should place the burden of persuasion on the unsubsidized competitor.

To further improve the effectiveness of Option A, CCA urges the Commission to place the ultimate burden of persuasion on the challenged party, given the relative ease with which a wireless carrier can confirm that service is available on its own network.[21] This change also would bring Option A closer in line with the Commission's precedent governing challenges in

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[19] *Connect Am. Fund*, Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking, 31 FCC Rcd 3087 ¶ 122 (2016) ("*2016 Rate-of-Return Reform Order*"); *see also Connect Am. Fund*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 10139 ¶ 39 (2016) ("*Alaska Plan R&O*").

[20] *Id.* ¶ 131.

[21] *Cf. Further Notice* ¶ 240 (seeking comment on whether the Commission should place the burden of persuasion on the "party seeking to challenge the Bureaus' initial determination of eligibility for MF-II support").

the context of rate-of-return carriers seeking to remain on legacy support.[22] As the Commission determined in the *2016 Rate-of-Return Reform Order*, it is "extremely difficult for an incumbent provider to prove a negative – that a competitor does not have service in an area. Rather, the purported competitor is in a much better position to confirm that it is offering service in a given area."[23] Importantly, the Commission's reasoning applies equally well in the context of wireless network coverage. As the Commission is aware, wireless carriers can deploy the same radio access technology using a variety of spectrum holdings, each with distinct propagation characteristics. Carriers also have varying optimization strategies and service priorities that can affect their coverage, and choose the location of individual sites and antenna configurations based on business planning and external constraints that can differ from carrier to carrier. In short, each challenged carrier is in the best position to understand the strengths, limitations, and characteristics of its own mobile broadband network, and to develop evidence confirming the presence of coverage in a disputed location. The design of the MF-II challenge process should reflect these facts.

C. The Commission should not adopt a minimum challengeable area or restrict interested parties from filing a challenge.

To ensure that the challenge procedure remains robust and capable of improving on the accuracy of Form 477 data, the Commission should ensure the challenge process remains targeted, yet inclusive. First, the Commission should decline to adopt a minimum size for the

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[22] *See, e.g.*, *2016 Rate-of-Return Reform Order* ¶ 130 (burden should be placed on the unsubsidized competitor); *Phase II Challenge Process Order* ¶ 15 (noting the "difficulty in proving a negative (i.e., that service meeting defined criteria does not exist in a particular block)"); *Alaska Plan R&O* ¶ 39 ("unsubsidized competitors . . . carry the burden of persuasion").

[23] *2016 Rate-of-Return Reform Order* ¶ 130.

area initially challenged.[24] There should be no genuine concern that challenging parties will waste the Commission's time and resources – and their own – by targeting "*de minimis*" parcels of no value to consumers.[25] More importantly, by excluding areas based solely on their size, the Commission risks excluding coverage around important resources such as roads, public institutions, or agricultural operations.

Second, the Commission should allow all interested parties to participate in the challenge process, consistent with long-standing practice.[26] Rather than limit the availability of challenges to a carrier licensed in the challenged area or to relevant state or local governments, the Commission should permit challenges from any interested party who has a good faith belief, based on actual knowledge or past data collection, that there is not 4G LTE with at least 5 Mbps download speed coverage as depicted on Form 477. The need to allow non-carriers to file challenges is especially critical given that the "purpose of universal service is to benefit the customer, not the carrier."[27] Those who have the greatest interest in the successful deployment of 4G LTE, as well as first-hand knowledge of the local situation, should not be excluded from the process of determining where additional build-out is most needed.

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[24] *Id.* ¶ 234.

[25] *Id*.

[26] *See, e.g., Alaska Plan R&O* ¶ 39 (allowing incumbents or "other interested parties" to file a challenge); *2016 Rate-of-Return Reform Order* ¶ 122 ("incumbents and any other interested parties such as state public utility commissions and Tribal governments"); *Phase II Challenge Process Order* ¶¶ 4, 10, 15; *Connect Am. Fund*, Report and Order, 28 FCC Rcd 7766 ¶ 32 (2013) (all "[i]nterested parties").

[27] *Connect Am. Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17745 ¶ 221 (2011).

III. THE COMMISSION SHOULD REQUIRE CLEAR, RIGOROUS, AND RELIABLE EVIDENCE

In the *Further Notice*, the Commission seeks comment on the "standards and guidance" the Bureau should apply to "evaluate challenges and expedite their resolution."[28] Whatever *process* the Commission ultimately establishes, the Commission should ensure accurate substantive results by requiring evidence submitted by challengers and challenged carriers to be clear, rigorous, and reliable. Over the next ten years, the FCC will make approximately $4.53 billion available to fill coverage gaps, and it is imperative that the Commission make these decisions based on solid, accurate data. Congress likewise agrees, and has continuously noted that a strong foundation based on data that accurately reflects consumers' on-the-ground experience is critical to advancing such economic decisions.[29] As Chairman Blackburn recently noted, "we must accurately collect and aggregate data … but doing so is a fool's errand without precise data. This will ensure that private and federal investments are targeted at unserved areas."[30]

As an initial matter, and explained in greater detail below, preliminary challenges should require certifications to a good faith belief of eligibility, and no more. To be effective, propagation maps submitted by challenged carriers must be subject to specific conditions, including signal strength and resolution requirements. This will provide coverage determinations

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[28] *Further Notice* ¶ 230.

[29] *See supra*, note 8.

[30] Opening Statement of Hon. Marsha Blackburn. Subcommittee on Communications and Technology, "Broadband: Deploying America's 21st Century Infrastructure" (115 Cong.) (Mar. 21, 2017), *available at* http://docs.house.gov/meetings/IF/IF16/20170321/105740/HHRG-115-IF16-MState-B001243-20170321.pdf.

that reflect actual consumer experience and are conducted consistently across the country. Data submitted on "actual speeds" should include measurements of both speed and signal strength. While the Commission should encourage parties to leverage a variety of speed data in making their submissions, it also should adopt clear guidance on data collection to ensure that information submitted is reliable.

To that end, CCA understands that the five largest carriers have crafted a third proposal delineating a one-time data collection method and subsequent challenge process.[31] While these efforts are laudable and CCA is encouraged by these efforts, it is imperative that the FCC impose uniform standards and filing requirements upon any process adopted.[32] Specifically, the FCC should apply the following factors to any data collection and challenge process. First, the Reference Signal Received Power ("RSRP") level or some form of similar measurement should be standardized and clearly defined. As current Form 477 filings show, these results can be subjective and vary by equipment vendor and network design. Additionally, map files and/or data must be produced using a determined clutter factor, including clear indications of the precise loss values assigned to the clutter and feeder type. Likewise, bin sizes should be delineated and sufficiently high resolution. Like RSRP levels, providers can employ a variety of techniques in their data sets, which threatens to dilute coverage for comparison purposes. Finally, Remote Radio Head ("RRH") power differences should be considered. It is possible that

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[31] Regardless of the process adopted, CCA reiterates that the carriers subject to the Commission's Alaska Plan should continue to be exempt from any data collection and challenge process requirements adopted in this proceeding. *See supra*, note 19.

[32] *See* Letter from Trey Hanbury, Counsel to CCA, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 12-264, WT Docket Nos. 16-137, 10-208, WC Docket No. 11-10 (filed Oct. 25, 2016), at 1 ("CCA October 25, 2016 Letter").

certain factors, like channel size, can enhance a provider's power and ultimately distort data when compared to other providers. Incorporating the above factors will ensure any proposal accurately standardizes data and provides the Commission with a more robust coverage analysis across the United States.

A. Standards for initial challenges.

In the *Further Notice*, the Commission seeks comment on the "evidence [that] "should be required in support of an initial challenge," and the "standards [that]" should be required for the submission of an initial challenge. As explained above, CCA supports Option A, which would require challenging parties to initiate a challenge by submitting a certification that the party "has a good faith belief, based on actual knowledge or past data collection, that there is not 4G LTE with at least 5 Mbps download speed coverage as depicted on Form 477."[33] No further evidence should be required at this preliminary stage.

As explained above, requiring parties to certify to their good faith belief will prevent potential challengers from filing baseless challenges that do nothing but burden challenged carriers and the Commission. The Commission's existing rules prohibit license holders and others from "intentionally provid[ing] material factual information that is incorrect or intentionally omit[ting] material information that is necessary to prevent any material factual statement that is made from being incorrect or misleading," and from providing incorrect information "without a reasonable basis for believing that any such material factual statement is correct and not misleading."[34] Requiring a "good faith belief, based on actual knowledge or past

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[33] *Further Notice* ¶ 232.

[34] 47 C.F.R. § 1.17(a).

data collection that there is not 4G LTE with at least 5 Mbps download speed coverage" amplifies and elaborates on this existing standard for the purpose of administering the challenge process.

Requiring more at this initial stage would repeat the mistakes of adopting Option B, which, as explained above, risks excluding smaller entities with limited resources from participating in the challenge process at all, and would mislead the Commission's ultimate identification of eligible areas. By requiring, for example, drive tests or on the ground testing, the Commission would place substantial expense on challenging parties even for "the most obviously mis-categorized areas," which challenged carriers may opt not to defend, and which could inadvertently make the challenge process less targeted in areas where it could be most efficient.[35] Overall, limited resources should be used to challenge targeted areas that need it most.

If the Commission is concerned that existing prohibitions against intentionally providing false information will not suffice, and wishes to verify the basis for a challengers' "good faith belief, based on actual knowledge or past data collection" that an area is underserved or unserved, the Commission may require challengers to retain documentation supporting their good faith belief. The Commission should provide sufficient flexibility with respect to the type of supporting documentation that a challenger may provide. For example, challengers could provide prior drive test results that a carrier collected regarding others' networks when it was testing its own network for a different purpose. Challengers also could provide an engineering analysis conducted for some other purpose, such as deciding where to place a new tower.

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[35] *Further Notice* ¶ 227.

Whatever the basis for the good faith belief, a requirement that challengers maintain documents will further deter any frivolous challenges and ensure that the challenge process is efficient and inclusive.

B. Standards for propagation maps submitted by a challenged carrier.

The second step of Option A permits a challenged carrier to respond to a challenge by submitting engineering or propagation maps to demonstrate its expected coverage for the area challenged.[36] CCA agrees that this is a reasonable second step for challenged carriers that disagree with a challenging party's certification that an area does not meet the criteria to qualify as ineligible.[37] Whether the Commission adopts Option A ultimately or takes another approach, the Commission should certainly adopt specific standards for propagation maps submitted as evidence in the challenge process.

The *Further Notice* seeks comment on whether to adopt a signal strength threshold for propagation maps. CCA reiterates that a signal strength threshold is essential. Without a standard for signal strength, two carriers may submit identical propagation maps reflecting very different expected network performance; even changes resulting from as little as a 5 dB difference in maximum allowable path loss could result in an overestimation of coverage by more than 100%—and obscure vastly different consumer experiences in the areas each carrier

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[36] *Id.* ¶ 236.

[37] *See* CCA October 25, 2016 Letter at 1.

suggests is covered.[38] In CCA members' experience, minimum signal strength of -85 dBm reasonably reflects what consumers would consider "good" performance.[39]

The Commission also should adopt a standard resolution for shapefiles submitted as propagation maps. The record already shows how insufficiently granular resolution can mask areas that are unserved or underserved.[40] Specifically, low resolution files are misleading as they may appear crisp at a national level, but ultimately distort results at the state and county level where mobile broadband coverage data and consumers' experience is most relevant.[41] The Commission's Form 477 filing instructions state that filers "shall have" a resolution of 100 meters or better for their coverage shapefiles, showing that the Commission already finds it reasonable and not overly burdensome for all carriers to provide their coverage maps at a certain resolution.[42] At the least, the Commission should require no less in the Mobility Fund Phase II challenge process.

Finally, as noted above, the Commission should ensure that any adopted challenge procedure affords participating parties adequate time to gather, analyze, and submit relevant

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38 *Id.* at 1 & p.5 of attachment.

39 *See also* Letter from David A. LaFuria, Counsel to United States Cellular Corporation, to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90, WT Docket No. 10-208 (filed Feb. 17, 2017), at 2; Letter from Caressa D. Bennet, Rural Wireless Association, to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 10-208, WC Docket No. 10-90 (filed Aug. 23, 2016), at 8 & n.33.

40 *See* CCA October 25, 2016 Letter at 1 & pp. 5-7 of attachment.

41 *Id*.

42 FCC Form 477, Mobile Broadband Deployment, *How Should I Format My Mobile Broadband Deployment Data?*, at 2, modified Dec. 5, 2016, https://transition.fcc.gov/form477/MBD/formatting_mbd.pdf.

data. CCA supports the FCC's goal to quickly transition to a revised MF-II program.[43] At the same time, the Commission must be mindful of the personnel and financial resources necessary for challenging and challenged parties to comply with Commission procedure and adequately provide substantive evidence. If the Commission places the burden on a challenging carrier to submit actual coverage analysis, it must provide at least a 120-day period to obtain, sort, and analyze this data using the methods specified below.

C. Standards for measuring "actual speeds" being provided to customers.

The final evidentiary step of Option A, as set forth in the *Further Notice*, would require the challenging party to submit "actual speed data (potentially with supporting signal strength data) from hardware- or software-based drive tests or app-based tests (e.g., such as those from established companies such as Ookla, Rootmetrics, Nielsen, and Mosaik)."[44] Challenged parties also may choose to submit actual speed data in addition to their propagation maps. CCA strongly supports the use of "on the ground" data as the most persuasive form of evidence to prove or disprove 4G LTE coverage. Done well, such testing and analysis best simulates what consumers actually experience as they use their devices normally. But the Commission should adopt several related standards to ensure that actual speed testing in fact accurately reflects network performance.

First, the Commission should require signal strength data in addition to download speed. Signal strength data provides a separate but parallel measure of the quality of service at a

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[43] *Further Notice* ¶ 226.

[44] *Further Notice* ¶ 238.

particular test point. The signal strength standard should be the same as adopted for use in the propagation maps described above (-85 dBm).

Second, signal strength and speed should be tested together, and at a sufficient number of points within a tested area to show that it is more likely than not that the area is served or unserved. The specific number of observations will vary depending on the size of the area, the nature of the topography, the number and quality of obstacles, and other factors that may cause variations in network performance. Rather than prescribing a specific number and dispersal of testing points, the Commission should require that submissions be accompanied by a certification from a qualified testing engineer that the number and placement of tests make it more likely than not that the area, taken as a whole, is served or unserved as appropriate.

Finally, parties submitting actual speed data should be required to collect such data in a manner that ensures reliability, credibility, and usefulness. To that end, CCA recommends that the Commission provide parties with the following guidance on the collection of actual speed data. This guidance will ensure the quality of data informing the challenge process, and commit the Commission to weighing speed data based on reliability.

The data collected should reflect recent performance. CCA suggests that data should be collected no more than six months prior to the data of submission to the Commission.

Data may be collected via drive test at a sufficient number of locations. CCA agrees that drive test data is valuable, but only if signal strength and speed data are collected at a sufficient number of points within a challenged area to reflect performance throughout the area. In some areas, drivable roads may exist in sufficiently diverse locations to permit such a collection. In other areas drive testing alone may not be adequate. In no event should drive

testing be a mandatory method of collection, nor be characterized as the only suitable data collection method.

Data may be collected via applications on consumer devices. The Commission should permit the submission of data collected via applications on consumer devices. It should commit, however, to weighing such evidence based on its reliability, lending credence to the predictive data. Indeed, while multiple methods of such testing are currently available, some are more informative than others. The Commission should give the most persuasive value to data collected passively, without the involvement of the consumer or tester (except to agree to the testing), and without using specific "test files" for upload and download testing but instead testing the network as the consumer performs whatever tasks the consumer performs as part of his or her normal use of the device. This form of testing best reflects the real-world, on-the-ground consumer experience and is least susceptible to manipulation or interference from the carrier whose network is being tested. Other forms of testing - such as scripted tests that download and/or upload specific files and test performance during that upload or download, or tests intentionally run as part of a planned testing program - also should have some persuasive value. Tests that simply record performance when a consumer decides to run a "speed test"-type application should have little or no persuasive value. Consumers are more likely to run such tests when they are experiencing especially good or especially poor network performance; as such, the results tend to be skewed and less valuable than unbiased testing.

Data should be collected and analyzed by an independent third party. The submitting party should be required to certify that all data associated with the submission to the Commission were collected and analyzed by an independent, third-party professional tester, or in-house, certified engineer. In this way, the Commission and all parties will have greater confidence that

the data accurately reflect *unbiased* testing. Both challengers and challenged parties will have incentives to submit performance data that best reflects the position they have taken regarding coverage in a specific area. While CCA has no doubt that most if not all parties will participate in the process in good faith, even subtle decisions about location and volume of testing may have a significant impact on results.

Data should be submitted promptly after collection. Finally, in line with the Commission's goal to facilitate a swift challenge process and MF-II reverse auction, CCA supports implementation of a reasonable timeframe by which parties should submit their on-the-ground data once propagation maps have been filed. Specifically, as noted above, the number of observations that a carrier will be required to submit will vary depending on the size of the area, the nature of the topography, the number and quality of obstacles, and other factors that may cause variations in network performance. The FCC should impose a reasonable timeframe beginning from the date of submission of propagation maps to gather, analyze, and supplement any additional on-the-ground test results. Affording parties the ability to layer propagation maps with additional data will promote a robust and efficient challenge process upon which the Commission can comfortably begin the MF-II reverse auction.

IV. CONCLUSION

With the right procedure and evidentiary requirements in place, the Commission can ensure that the MF-II challenge process welcomes participation where it is needed, prevents frivolous claims, and generates accurate results that improve the targeting of support to areas that need it most. CCA urges the Commission to proceed with Option A, place the burden of persuasion on the provider, and adopt evidentiary standards that allow parties to marshal a variety of data on speed and coverage, while ensuring that the Commission's eligibility determinations rest on evidence that is clear, rigorous, and reliable.

Respectfully submitted,

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